

Wound Care Curriculum

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Problem & PICOT

There are many different types of wounds in healthcare worth mentioning. There are, pressure wounds, surgical wounds, as well as wounds caused from traumatic events as mentioned above. All wound types may start as an acute wound but can develop into chronic wounds if not treated properly. Wounds heal more efficiently if there is consistent care taking place. In all avenues of wound care consistency improves outcomes, beginning with physicians writing orders all the way to nurses and nurse aids caring for patients. In a study done in over fifty medical schools only seven of the medical schools offered a wound healing elective in their curriculum (Yim et al., 2014). This gap allows for nursing curriculum to fill in the missing areas in wound care education that are not being fulfilled in medical schools.

The importance of education for nurses and nursing students regarding wound care could reduce future healthcare costs as well as improve patient outcomes. One national systematic review found chronic disease development, such as diabetes and coronary artery disease, has a direct correlation to chronic wound development (Martinengo et al., 2019). Wound care educational programs could be instrumental in future healthcare practice by reducing healthcare costs and improving patient outcomes. Carmichael et al. (2021), discusses the importance of consistent wound curriculum for the best care of wounds. It is of great importance to reduce healthcare costs and improve patient outcomes and by educating nurses on wound care this could do both. The practice question guiding this project was: Does implementation of wound care curriculum improve knowledge and confidence in the nursing student's ability to provide wound care to their patients?

Available Knowledge & Rationale

The Iowa model of Evidence based practice was appropriate to utilize in developing a framework for this wound care curriculum (Bergstrom, 2011). The first step of the Iowa Model is to identify the issues or specific opportunities for improvement. The deficit in wound care preparation in the healthcare system was the problem that was presented and alleviated with the curriculum. As noted, previously in the knowledge summary, wound care curriculum is poorly represented in the medical model in healthcare and therefore provides a great opportunity to place the education in the nursing field (Yim et al., 2014). According to Bergstrom (2011), the Iowa model provided a framework for her work regarding skin care in patients receiving radiation treatments. After identifying the problem, the model provided the next step to form the PICOT question. The PICOT question helped to maintain the boundaries of the project so the curriculum did not become scattered and unfocused. As well as provided boundaries, the model focused on the priority and helped to keep a narrowed study of which wound care topics will be discussed in the curriculum. The model provided a step for developing your team to provide the wound care curriculum as well as the step of collecting the evidence and determining whether the evidence is sufficient. The model provided a step to design the curriculum directed at wound care improvement and then implement the practice change.

Methods

Context

The intervention was implemented in the Midwest, at an academic school of nursing. The academic school of nursing has a bachelorette prepared nursing program, in which, students earn their Bachelor of Science in nursing. The participants in the study were nursing students. The annual cohort varies in size but offers approximately 60 nursing student positions each year. The project was approved by leadership at the University. The instructor volunteering her classroom space was a master's prepared registered nurse. In total, there are 21 instructors for this campus and the University is accredited by the Higher Learning Commission, a commission of the North Central Association of Colleges and Schools.

Intervention

The intervention was implemented in the academic setting at this Midwestern university campus. The population was first year nursing students. The education topic consisted of wound care. The doctoral student was responsible for delivering the educational content in the form of a power point slide presentation as well administering the pre and posttests.

The power point slide presentation was comprised of slides discussing staging of wounds, the different types of wounds, for example, venous stasis ulcers compared to arterial circulation related wounds. The education also covered appropriate dressings to apply to specific types of wound beds and the students were able to compare and contrast the risk factors for wound development. Basic anatomy of the skin, wound staging, and documenting wounds were covered as well. The pre and posttest were comprised of a mixed question type test, consisting of the Likert scales as well as multiple choice. The purpose of the pre and posttests were to measure the knowledge obtained after the intervention as well as to measure the confidence one feels in their ability to deliver wound care before and after the intervention.

The intervention was offered to the students with no penalty in their academic success at the college of nursing. They were offered a consent to participate prior to the project beginning. This intervention was of no cost to the student or the campus.

Study of Intervention

According to Golda (2011), multiple choice testing remains the standard for testing students in the health sciences field. The multiple-choice test remains reliable and very easily replicated. It is also very cut and dry, very easily understood by many different types of learners (Golda, 2011). The questions used for this intervention were mostly multiple choice. However, some numbered rating questions were present in the tests as well. These measured the confidence level in the wound care intervention.

This intervention included two tests, one pretest and one posttest. One was administered before the PowerPoint presentation to measure knowledge and confidence of wound and wound care before the intervention was delivered to the students. This pretest was given as a paper test, in person, in a classroom setting, using paper and pencil. The doctoral student asked the participants to mark traditional or nontraditional student on their pretest. The terms traditional and nontraditional were defined to the cohort. The posttest was administered after the Power Point presentation, also using paper and pencil. The multiple-choice pre and posttest each included 15 questions. The first 5 questions of the pre and posttest utilized a Likert scale to measure the confidence in identifying wounds, performing proper wound care and identifying risk factors in wound development. The remaining 10 questions were knowledge based multiple choice questions that I determined the knowledge learned with the delivery of this intervention. These questions focused on wound staging, wound anatomy, and appropriate dressing for different types of wounds. This measured the knowledge the students had regarding wound care as well as measuring their confidence in carrying out wound care after they had completed the course.

Measure

The demographic data collected consisted of capturing if the student was a traditional or non-traditional nursing student. The traditional student category consisted of students that have graduated from high school and entered directly into college. The nontraditional student category consisted of students returning to college later in life.

The pre and posttests measured the knowledge and confidence of the participant. The first five questions of the 15 question pre and posttests, use the Likert Scale to measure the confidence in providing wound care interventions before the intervention and after the intervention. The Likert scale responses included four categories of confidence consisting of: not confident, somewhat confident, confident, and very confident. The last ten questions of the 15 questions pre and posttest measured the knowledge the participants held before the intervention and what they gained after the intervention. It should be noted, the pre and posttest questions were created by the project designer and no validity or reliability studies have been conducted on these questions. Each participant had an alphanumeric character at the top of each test to ensure the accuracy for analysis. For example, the pretest for a participant will be labeled as 1A and the posttest labeled as 1B.

Data Analysis

An excel spreadsheet was used to collect and organize data for the intervention. The intervention data was collected from the pre and posttests. Descriptive and inferential statistics were performed on the data collected. Descriptive statistics were not performed on the demographic data of traditional and non-traditional students due to the fact only one nontraditional student was present in this cohort. Inferential statistics were used to compare the pre and post-test results to evaluate the effectiveness of the intervention. The independent t-test was used to evaluate the pre-test results compared to the post-test results to determine if there was a significant difference in participants' knowledge and confidence pre- and post-intervention. The data was evaluated looking at the overall knowledge, confidence in identification, and confidence in wound care treatment.

Results

The results of the pretest and the posttest were evaluated to determine the knowledge gained by this curriculum as well as the confidence in performing wound care to a patient before and after the curriculum.

There were some demographic data, for example male and female students and traditional and nontraditional students. The participation rate for the wound care curriculum was 97%. There were a total of 36 students present to participate in the wound care curriculum. There was only one nontraditional student in this cohort in relation to 35 traditional students, five male students, and 31 female students out of thirty-six students' total. These data subsets were determined to be inconclusive so were not evaluated in the statistical data.

In the data that was relevant, therefore evaluated for this paper, a dependent T-test was completed. There are 35 pieces of data that are paired. There is a before the intervention of wound care curriculum set and after the intervention of wound care curriculum set. The second set of data is dependent on the first set. The second set shows increased confidence and knowledge when compared to the first data set. The total test results without dividing confidence level and knowledge gained are ($t = 13.5$, $df = 34$, $p = 3.17$). The confidence gained by the intervention are as follows, ($t = 13.4$, $df = 34$, $p = 3.39$). The knowledge gained by the intervention is as follows, ($t = 3.25$, $df = 34$, $p = 0.002$).

Discussion

Summary

In summary, the aim of this intervention, was to implement an educational curriculum to improve wound care treatment in the healthcare setting. The curriculum was delivered by the doctoral student to the nursing student participants. The doctoral student used the pretest, designed by the doctoral student, to determine the knowledge and confidence level of the participant group before the intervention. The doctoral student delivered the intervention and followed up with a posttest also designed by the doctoral student. The pre and data was evaluated by the doctoral programs statistician and determined that the confidence and knowledge of wound care improved in both, confidence and knowledge of wound care categories. The data in this project shows the need for a wound care curriculum and that an educational curriculum would improve confidence in wound care preparedness.

Interpretation

In summation, a uniform wound care curriculum is needed in the improvement of wound care in healthcare. This intervention would improve patient outcomes and decrease costs in healthcare. As discussed by, Carmichael et al, the less time spent healing wounds, the less cost burden on the healthcare system (2021). Yim et al, 2014, discusses the lack of wound care preparedness in the medical model and medical schools in the United States (2014). This intervention fills the gap in healthcare. The intervention, which consisted of a pretest, the wound care curriculum intervention, followed by a posttest, was proven through pre and posttest results, to improve confidence and knowledge levels after the intervention. The intervention could easily be replicated and implemented in nursing school environments. There was no cost to the participants to complete the intervention. The option to refrain from participation was offered to each participant without penalty.

Limitations

One limitation identified was the data regarding nontraditional students and male students was determined to be inconclusive, due to the fact they did not provide a good comparison of knowledge or confidence in providing wound care to a patient. Another limitation worth mentioning was the small cohort. This small-scale study can be hard to provide the data to prove the need for this wound care curriculum. In addition, a second-year nursing student may be somewhat knowledgeable about the subject of wound care and the knowledge gained was minimal according to their pre and post test data.

Conclusions

In conclusion, this project evaluated the knowledge and confidence in wound care education in the healthcare system. The findings of this study determined whether the participants felt confident in their abilities to provide appropriate wound care to patients in the nursing field. It also measured knowledge of wound care before and after the intervention. This project provided insight in improving wound care preparedness in the nursing field, as well as provide confidence in the wound care curriculum the nursing institutions are providing.